

SQ3R Modified for Math



Overview: Math classes are very difficult for most people. Part of the reason why is that the text can be extremely complex to read. By using the SQ3R reading strategy modified for mathematics, you can read through and learn your mathematics text more efficiently. Also, using this strategy will help you understand and remember the information better. When you practice and use SQ3R you will become more confident about your math ability and be able to attain better grades.

Here are the steps for this Strategy:

Survey
Question
Read
Study the Problems
Recite
Review

Survey



What to do during this step:

Preview what the chapter is about by:

- ✚ Reading the introduction and conclusion
- ✚ Reading any questions provided by the author—usually at beginning or end
- ✚ Look at the problems at the end of the chapter
- ✚ Identify and look up any new terms or theorems
- ✚ Review any previously learned terms or equations that you might need to know

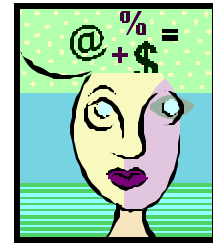
Why this step is so important:

When you survey the chapter you are familiarizing yourself with the content and style of the author. You will be better prepared to learn your mathematics information. You will also gain insight into how the sections of the chapter fit together, thereby making it easier for you to understand the math applications necessary.

Practice it!

Open your math textbook to the chapter that you must read for homework. Follow the steps above, paying careful attention to the structure of the chapter. Use the space below to identify any unknown terms and look them up in the glossary.

Now you are ready for the next step, Question...



Question

What to do during this step:

After you have surveyed the chapter, and using what you have learned from class, you should be able to formulate some questions about the reading. Maybe it is something that you are confused about, or something that you are curious to see how a certain problem is solved.

- ◆ You should use the introduction, conclusion, any other chapter sections, and/or class notes to help you develop some questions about the chapter.

Why this step is so important:

When you formulate questions about a topic, you are automatically going to be stimulated to answer those questions. We, by nature, are curious beings. This question and answer technique will help you focus on the topic, helping you maintain concentration and learn better.

Practice it!

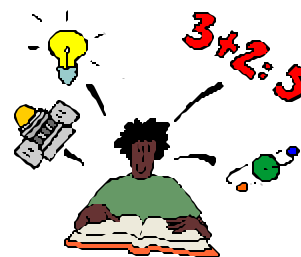
Open again to the chapter assigned to you to read. Briefly skim through the first section of the chapter and develop a question that you would like to know the answer to (and you think will be answered in that section). After you have generated a couple of questions for the first section, you will read to answer those questions. Use the bottom of this page to list your questions for the different sections of the chapter.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Let's move to the important part, to

Read!

Read



What to do during this step:

This step is used in conjunction with the previous Question step. By breaking the chapter into parts by asking questions and reading to find the answers, you are actively reading. So, by this stage you should already:

- ⊕ Know what all the vocabulary and symbols mean
- ⊕ Have formulated questions for the section you are about to read

Read to answer those questions. Write the answers down. After you have read the entire section, you may want to jot down other notes, ideas or questions that you may have.

Why this step is so important:

You are now learning how to read **actively**! You are taking responsibility for your own learning by staying focused and concentrating on important pieces of information. Also, it is vital that you read actively in math, especially to do well in the next step, Study the Problems.

Practice it!

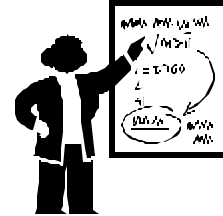
Look back to the questions that you created for the first section. Read the section carefully, paying close attention to answering that question and also for any other main ideas that may come up. Use the space below to write the answers to your questions and any other important facts.

1. _____
2. _____
3. _____
4. _____
5. _____

6. _____
7. _____
8. _____

On to the hard part, Study the Problems...

Study the Problems



What to do during this step:

You are now ready to Study the Problems. This is the hard part for most people. But you should feel confident: You know the vocabulary terms and symbols and have read actively throughout the chapter. So, here's what to do next:

- ✱ Look back to the problems presented in the text
- ✱ Analyze it, putting abstract formulas in your own words
- ✱ Ask yourself these questions:
 - What concepts, formulas, and rules were applied?
 - What methods were used to solve the problem? Why was that method used?
 - What was the first step? Second step? And so on...
 - Have any steps been combined?
 - What differences or similarities are there between examples in the book and any homework problems?
- ✱ Draw diagrams, and use labels

Remember—Take Notes and write things in your own words as much as possible.

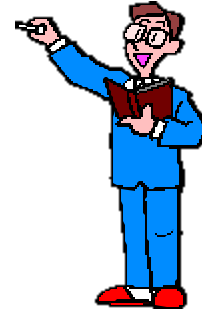
This step will take a while, but it is well worth the effort!

Why this step is so important:

This is probably the **most critical part of reading Mathematics** material, and actually learning from it! This is what the majority of your class lectures will be about, and I would guess most of your test questions will be about too. When you can think about each problem, analyze it, and put it into your own words, you will have it made in Math class!

Practice it!

Use the bottom space to go over the first problem presented in your chapter. Keep in mind the questions provided above. Take notes in your own words.



A good tip—after studying the problem, close the book and

What to do during this step:

Go over what you have just done with the problems, and verbalize, verbalize, verbalize! Putting problem solving into your own words will help you remember what to do on different problems. **Focus on the processes used, not specifically the answer.** Ask yourself these questions:

- ✍ What concepts, formulas, and rules did I apply to solve the problem?
- ✍ What methods did I use?
- ✍ How did I begin? Walk yourself through the problem again out loud.
- ✍ Can I do this problem another way? Can I simplify it?
- ✍ Does this problem compare with others from class or homework?

Talk out the problems and then write down your explanations in your notes.

Why this step is so important:

This is the only way to really learn your mathematics material. You will be much better prepared for classes and for your exams. When you talk things through in

your own words, you are stamping that information into your mind. This step will help you remember how to solve math problems so that you don't forget.

Look back at the problem you studied in the last step. Talk out the steps and processes in your own words. Jot down any added information that you may need to. Do not move on to another problem until you are confident that you understand the one you are working on. Use the space below for any notes, or diagrams you want to draw.



Review

What to do during this step:

After about 1-2 days

- ✚ Look back over your chapter and your notes
- ✚ Recite again how you solved each problem
- ✚ Review the vocabulary terms, symbols and formulas
- ✚ List and study the concepts and formulas that are the most important from this chapter

You may need to review multiple times before the next class, or next test. This step should be the easiest because you were actively learning the material along the way.

You may want to practice additional problems to test yourself to see how well you know the material.

Why this step is so important:

This is the step that will solidify your learning of the material. We all learn by repetition. Reviewing the material will help you learn better and get better grades.

Practice it!

Take some time to review the chapter, problems and your notes. This should be done within about a day or so of completing the Recite stage. Plan ahead so you have multiple times to review, not just cramming the night before the test.



Congratulations! You are well on your way to better understanding and better grades in your Mathematics classes. You have worked hard, and I know you will find the effort pays off!